USER MANUAL
Model: HDTM V2.0

Horizon Digital Terrestrial Meter

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Horizon Global Electronics Ltd
www.horizonhge.com

Horizon Global Electronics Ltd

Unit 1
8 Kinetic Crescent
The London Office and Science Park
Enfield
EN3 7XH
United Kingdom

Phone: +44 (0)20 8344 8230
Fax: +44 (0)20 8344 8235
Email: sales@horizonhge.com
Web: www.horizonhge.com

Chapter 1

Getting Started

1) General Information & Safety

2) Accessories

3) Features

4) Using the Meter

5) Charging the Battery

6) Downloading from the Website

7) Transferring Files into your Meter

8) Troubleshooting

1) General Information and Safety

The HDTM is a compact, light weight and easy to use terrestrial installation meter featuring an easy to read display that shows signal strength and digital signal quality.

Everything you need is supplied with your meter, which includes a computer programming lead, UHF-BNC adapter, two 10 dB attenuators, mains charger lead and car charger. The rain cover and leather case are already fitted.

The HDTM can also be easily re-programmed from the Horizon Global Electronics website www.horizonhge.com with your choice of transmitters.

Spare battery packs are available directly from Horizon Global Electronics and can be replaced without voiding your warranty

Replacement data leads, mains charging leads and in car chargers are also available directly from Horizon Global Electronics.

Safety:

Clean only with a dry cloth

Always use the protective case and cover provided

Read the instructions fully before operating your unit for the first time

Care should be exercised when using the carry strap as it can present a choking hazard: only use when slipping or falling is not a possibility

Do not disassemble your unit or interfere with the internal components; this will void your warranty and there is a possibility of electric shock.

Only use the provided battery, mains lead, DC car charger and computer programming lead, as using other types may cause damage to your unit, which will void your warranty and could cause electric shock. Replacement battery packs are available directly from Horizon Global Electronics Ltd.

Should repair or service be required contact us directly at Horizon Global Electronics Ltd by calling ***+44 (0)20 8344 8230*** or via our website ***www.horizonhge.com***

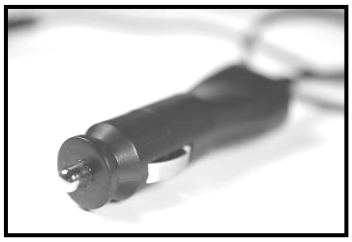
Please note that specifications are subject to change without notice, and that accessories may not be exactly as pictured.

2) Accessories

Your HDTM is supplied with this Instruction Manual and these items below; check if you have all the following. If any items are missing please contact your supplier.

UHF-BNC Adapter

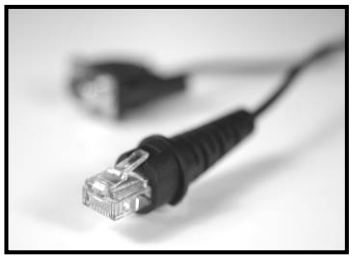
Car Charger



Two 10 dB Attenuators

AC Mains Charger Lead

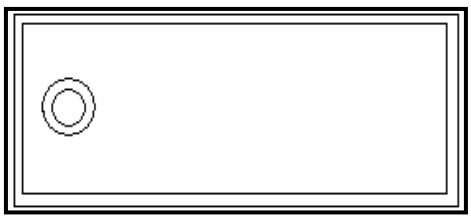
Computer Programming Lead



Leather Case

Battery Pack

Rain Cover



Please dispose of the packaging carefully and recycle where possible.

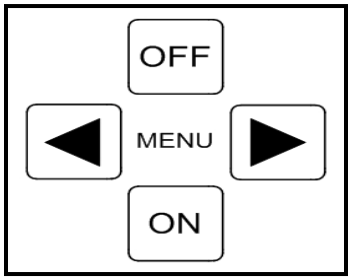
3) Features

Specifics;

- Displays signal strength (RF Level) and Pre and Post BER together
- Fast and accurate Pre BER in real time for easy pointing of aerial via built in COFDM in real time. 4 quality stars indicate the quality of service. 3 stars or over indicate pass, 2 stars or less denote fail
- Digital SNR displayed in dB
- 32 Pre Programmed transmitters (via website) or all channel step-through
- Audible and visual tune-in, with display backlight
- 7 or 8 MHz channel spacing preset
- 2K and 8K channels
- Automatic Constellation
- VHF (band3) and UHF bands
- RF Input range 167-862 MHz
- Input dynamic range – 72dBm~20dBm
- Input Connector BNC. Input impedance 75ohms.
- Built in universal charger 100-240 V AC/12 W Intelligent charger (CE approved) with delta V delta T detection. Fast Charge, then trickle
- Run time with full charge: Minimum 6 hours from 2.3Ah NiMh battery
- Figure of 8 mains input connector. 2.1mm female PSU plug for external charge via supplied car charger
- Computer interface: Serial port for updating transmitter list.
- Supplied with leather case, mains lead, programming lead, car charger, IEC to BNC adapter and 2 10dB attenuators.

4) Using the Meter

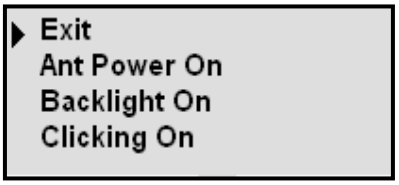
The HDTM Keypad

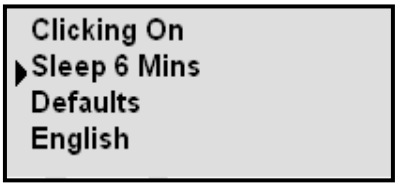


You can set your preferences by entering the “Setup Mode”. To access the menu shown below, make sure the meter is off then press and hold the “OFF” button for 5 seconds.

Functions in setup mode are:

1. Exit
2. Ant Power On/Off (for active antennae)
3. Backlight On/Off
4. Clicking On/Off
5. Sleep
6. Defaults
7. English, Italian, French, Spanish





Default settings are:
Ant Power off
Backlight off
Clicking on

Please Note numbers: 2, 3, 4, 5, 6, and 7 can all be changed to suit your preference.

To turn the meter on press and hold the ON button for 5 seconds.

The first screen will flash indicating the Version Number, terrestrial List Name and the Battery Strength in % terms.

4) Using the Meter

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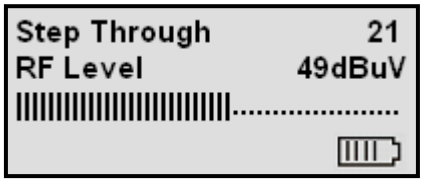
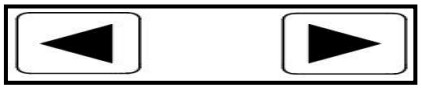
Step Through mode;

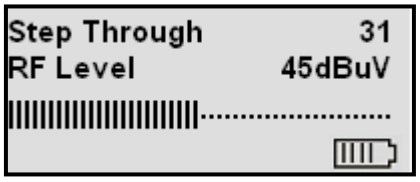
As standard, the HDTM is supplied programmed with Step Through settings (channels 21-69). The second screen (illustrated) shows the Channel Number, RF Signal Level received in dBuV, and the battery level.



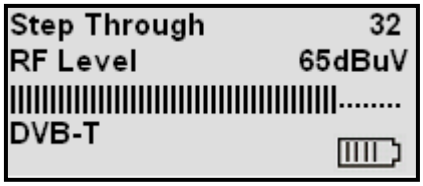
To step through the Channel Numbers, use the left or right arrow keys (the channel number is shown at the top right of the display)



When using the “Step Through” setting, all UHF channel numbers 21-69 are available. Select a weak channel (low RF level) to make fine adjustments to your aerial. If the signal is too strong >75dBuV, connect one or both of the supplied attenuators in the aerial lead.

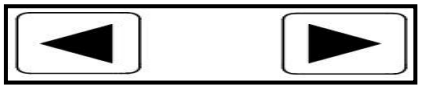


When the alignment has been made, the meter will show “DVB-T” on some channels, indicating you have a digital carrier. See “Measuring BER (Pre BER) on the next page.



Named Transmitter mode:

If the meter is programmed with named transmitters (see “Downloading from the Website”) you can move through the transmitter list by holding down the left or right arrow keys for a few seconds.



In this mode, only the digital muxes are shown in the channel number position. Step through the muxes with short presses on left or right arrow keys.

4) Using the Meter

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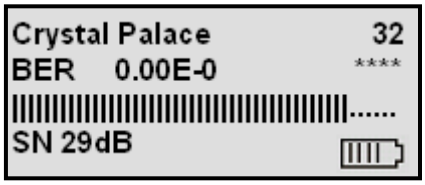
Measuring BER (Pre BER):

When a digital mux is selected (DVB-T), press the ON button to switch to BER mode.

In BER mode, you can make further adjustments to the aerial to improve the quality of the signal. The signal to noise measurement (the higher the better) is shown in the lower left corner of the display. The BER is shown, in numerical form and with a star grading, after a few seconds.



See below for an explanation of BER measurement.

BER Indication:

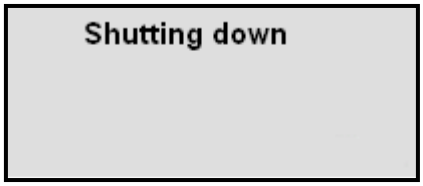
A BER value of 2E-6 or lower is needed for a satisfactory reception. All zeros indicates no bit errors.

Alternatively, you can use the star display as a quick PASS or FAIL indication, as shown in the following table;

*****	***<2E-4***	***Fail***
******	***<2E-5***	***Marginal***
*******	***<2E-6***	***Pass***
********	***<2E-7***	***Pass***

Shutting Down:

To turn your meter off, press the OFF button. "Shutting down" will appear on the screen



5) Charging the Battery

The meter will ***NOT*** be fully charged when you receive it. We recommend you charge the meter for an initial ***24 hours*** before use. If your meter is not being used for a long period of time we recommend disconnecting the battery.

The battery pack is replaceable; to replace the batteries slide the meter out of its protective case, open the cover on the bottom of the unit and disconnect the batteries. If the battery has been disconnected the meter will indicate flat battery (0%). You can also top up your battery from your vehicle with the DC Adapter supplied.

PLEASE NOTE: The meter will not operate whilst the unit is being charged.

Charging with the Mains Lead

Open the flap at the back of the HDTM leather case to access the mains inlet. Plug the mains lead into this port and the other end to your local supply socket.

Charging from a Vehicle.

The vehicle 12V DC charge port is on the right side of the unit. Plug the car charger lead into the bottom socket and the other end to the vehicle's "aux" socket. ***Please note:*** on certain vehicles the aux socket is switched off unless the vehicle is running. For in-vehicle charging only use the lead supplied. The use of another lead may damage the meter and will void the warranty. The HDTM can remain connected to either power source in ***"Trickle Charge"*** state for an extended period of time without damaging any internal components or the battery pack.

6) Downloading from the Website

The HDTM meter is supplied with a standard step through channel list (Channel 21-69) upon delivery. To customize the meter it's necessary to download the required transmitters that are locally used. You can load from 1-32 transmitters in the memory of the HDTM. Only one list will be retained in the HDTM memory. The previous list is overwritten by the next programming you do. Step Through counts as one transmitter.

To be able to update your channel list you will require a PC/Laptop with at least one 9 pin serial port running a Windows operating system; you will also require access to the internet. A USB to Serial interface adapter may be used.

To change the transmitter list in your HDTM, go to ***www.horizonhge.com*** and ***"Download"*** page. Then select "Click for Downloads for This Product".

The following screen will appear; click on your required region and follow the instructions on the next page.

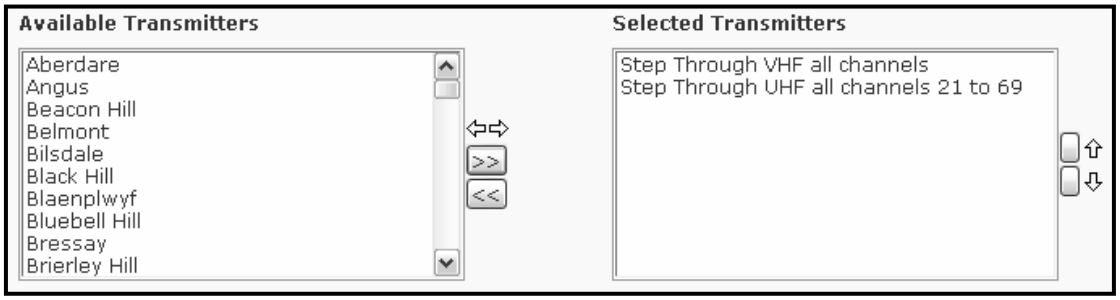
Select your region from the map, for example: Europe and UK

6) Downloading from the Website

- Enter a selection name for the file, which will be on display when you turn on your meter.

- Enter your email address; this is where the file you create will be sent to.

- Select your desired transmitters by highlighting and clicking the transmitter required to put it into your selected transmitter list.



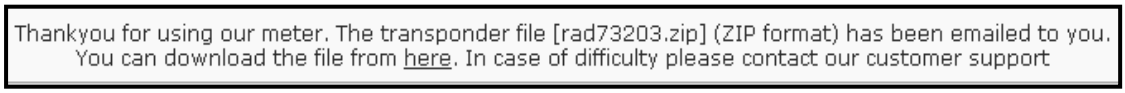
- Once the selection is complete, click

and you will be sent an email.

- Collect the email in your inbox. The email will have an attachment; this is the actual loading program preloaded with your selection.

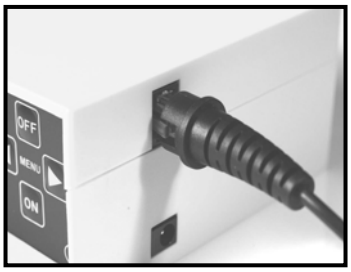
- Follow the instructions on the next page to upload the file to your meter.

- For the experienced user, as an option you can also download from the same page off the website

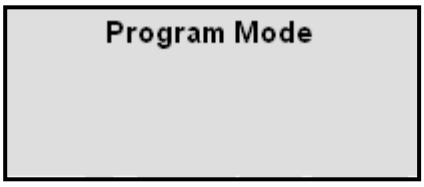

Thankyou for using our meter. The transponder file [rad73203.zip] (ZIP format) has been emailed to you.
You can download the file from here. In case of difficulty please contact our customer support

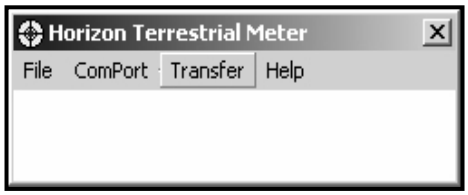
7) Transferring Data into your meter_

1) Make sure your Terrestrial Meter is switched off, then connect the data lead to the Serial Port at the back/side of your PC/Laptop and the other end to your meter, as shown below

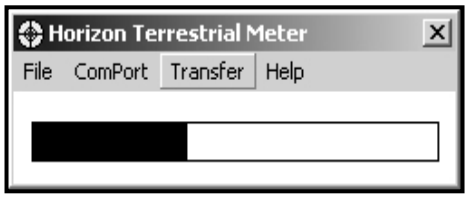


2) Wait for the meter to display “Program Mode” Then click on “Transfer”





3) After a few seconds a progress bar will appear



4) If you get this Error Message, check that the correct ComPort is selected, and that the cable is OK.

5) When complete you will see a popup window that says

6) Disconnect the meter from the computer, and it will be ready for use.

8) Troubleshooting

All HDTM owners should be aware that the unit arrives with a default Channel List (UHF channels 21-69), and this can be changed to suit your preference or location.

Please ensure that you have the most up to date transmitters loaded into your HDTM meter. These can be found in the downloads sections of the Horizon Global Electronics Ltd website.

If the meter shows no signal level or indication of a lock, check that the condition of your BNC adapter is not damaged as this will have an impact on your HDTM's performance.

I2C Error Indication

The I2C error detection firmware is embedded into all versions of Horizon Global Electronics Ltd meters: it is there in the event of a fault to protect the circuitry. This may be caused by circuit failure or very low battery power, which can be caused by extremely cold weather conditions. In low temperature environments do not leave your unit in your vehicle overnight as this will also impact on the performance of your unit.

Storage:

If you wish to store your units for extended periods of time greater than 3 weeks disconnect the battery connectors. When required, reconnect and charge overnight prior to use.

Tip: To keep your battery in good working order we recommend a full overnight charge at least once every two weeks for light usage. For everyday use, we recommend you put your unit on overnight charge prior to the next working day to ensure maximum battery power is available.

SPECIFICATION

Battery Pack	Ni-MH 2.3Ah
Intelligent Charger with delta V/T detection	Fast Charge (4 Hours), then Trickle
Universal charger input range	100-240 V AC @0.3A
Battery life with full charge	More than 6 hours
Unit discharge time (idle State)	~24 days
RF Input Range	35dBuV to 75 dBuV
RF Input Range	167-862 MHz (VHF III and UHF)
No. of transmitters stored in memory	32 (each with up to 32 Muxes)
Computer Interface	Serial via RS232

LIMITED WARRANTY

Horizon will, at our option, repair or replace any HORIZON Digital Terrestrial Meter found defective in manufacture within the warranty period (1 year).

The warranty period is determined by the date of HDTM purchase. Keep your receipt as proof of purchase. Otherwise the warranty is determined by date of manufacture.

This warranty does not apply to damage caused by accident, misuse, or tampering with The unit or seals. This does not affect your statutory rights.

DECLARATION OF CONFORMITY

Manufacture: Horizon Global Electronics Ltd
Address: Unit 1, 8 Kinetic Crescent, London Office & Science Park, Enfield EN3 7XH

Declares that the (Horizon Digital Terrestrial Meter "HDTM V2) is in conformity with the following Directives and Standards.

Low Voltage: 73/23/EEC 93/68/EEC EMC: 89/336/EEC 92/31/EEC 93/68/EEC

Technical Department
Horizon Global Electronics
London 1st October 2001

CE

www.horizonhge.com

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